

REMARKS

Claims 1, 2, 4, 6-9, 11, 14-18, 21, and 23-28 are currently pending in the Application. Claim 6 has been amended. Claims 11, 14-18, and 26 have been cancelled. No new matter has been added. No new matter has been added.

I. Claim Objections

Claim 6 has been objected to on the basis of dependency to a cancelled claim. Claim 6 has been amended to correct the dependency issue. As such, Applicants respectfully request withdrawal of the claim objection.

II. Rejections of Claims under 35 USC § 101

Claims 11, 14-18, and 26 stand rejected under 35 U.S.C. § 101 as being allegedly directed to non-statutory subject matter. Claims 11, 14-18, and 26 have been cancelled, without acquiescence in the cited basis for rejection or prejudice to pursue the original claims in a related application. As such, Applicants respectfully submit that this rejection has been rendered moot, and therefore should be withdrawn.

III. Rejections of Claims under 35 USC § 103

Claims 1-2, 4, 6-9, 11, 14-18, 21, and 23-28 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Wong (Pub. No. 2004/0264464) in view of, in view of Tang et al. (U.S. Patent No. 6,553,028 B1).

Regarding the rejection of claims 11, 14-18, and 26, the rejection is now moot based upon the cancellation of these claims. Regarding the rejection of claim 1-2, 4, 6-9, 21, 23-25, and 27-28, Applicant respectfully traverse.

A. Independent claim 1 recites:

wherein an encoding format of said VLAN descriptors include at least one of:
a contiguous range encoding that includes a starting VLAN indicator and an ending VLAN indicator;
a non-contiguous range encoding that includes a most significant bit (MSB) portion of a VLAN indicator and a bitmap decoded from a least significant bit (LSB) portion of the VLAN indicator

Applicants respectfully submit that neither Wong nor Tang teaches this claim element.

The Office Action (at page 5) cites to Wong at column 14, lines 37-43 as disclosing the “contiguous range encoding” claim element. Applicants assume that the Office Action inadvertently referred to Wong instead of Tang, since Wong does not have a column 14 whereas Tang does include a column 14 that corresponds to the statement in the Office Action.

The Office Action states that Col. 14, lines 37-43 discloses the claim element “a contiguous range encoding that includes a starting indicator and an ending indicator” based upon the disclosure of a replication process for each outgoing VLAN, where the pointer 750 corresponds to the claimed starting indicator and the entry having an asserted control bit allegedly corresponding to an ending indicator which specifies the termination of the replication for the frame.

Applicants respectfully disagree with this interpretation of Col. 14 lines 37-43 of Tang, which is reproduced below:

port-select signals. This replication process continues for each outgoing VLAN. Operationally, the replication engine 316 accesses each MET entry 700 sequentially (starting from the location referenced by the MET pointer 750) until it reaches an entry having an asserted control bit (within the HC field 712) that specifies termination of replication for the frame. The process described above is then repeated for the

First, it is noted that what is being described in this section is that a set of MET entries are accessed sequentially. Nothing indicates that a range of VLANs is being encoded continuously (or even sequentially).

In addition, it is noted that nothing in this section of Tang indicates that a continuous range encoding is being performed for VLANs. In fact, the word “continuous” does not appear anywhere in Tang, much less in this cited section of Tang. Tang itself does not teach or disclose that the MET entries are contiguous encodings of the VLANs.

Instead, Tang teaches that the Met entries are specified based upon shortcut control messages that indicate the VLAN color IDs for the entries in the MET table, where there is not indication in Tang that the identification of VLAN color IDs must be in a contiguous range order. See Col. 12, lines 4-65). This section of Tang very clearly states that the Met entries are based upon the VLAN entries in the TLV vector structures, where the VLAN in the vector structure (as shown in Fig. 6) are specifically delineated as individual VLAN entries – without any indication of a starting point or ending point that would indicate any type of range, much less a contiguous range.

The Office Action also fails to provide any support for where the “non-contiguous range encoding” element can be found in either the Wong or Tang references.

For at least these reasons, Applicants respectfully submit that claim 1 and its dependent claims are allowable over the cited references. For at least these same reasons, Applicants respectfully submit that independent claims 21 and 25, as well as their dependent claims, are likewise allowable over the cited references.

B. In addition, with respect to independent Claim 1, the Office Action has relied on the following excerpts from the Tang reference (col. 14, lines 4-15) to make a prior art showing of applicant's claimed technique "wherein...a number of duplications of the packet for each of the plurality of output ports is controlled by descriptors arranged in a linked-list table indexed by a hashing function applied to said multicast address data."

5 The replication engine uses the L3 information, including the MET pointer, MAC SA and LTL index to perform the necessary replication operations. Note that the LTL index 822 specifies the replication engine and not the router as a destination of the packet/frame. That is, the LTL index enables the replication engine to perform multicast packet replication while also implementing MFD (block-to-router);
10 as noted, the index 822 further specifies port select signals associated with the incoming (ingress) VLAN, e.g., port 2 of the red VLAN. For frames destined to ports on VLANs other than the ingress VLAN, the replication engine rewrites those frames.
15 Specifically each port on the switch receives the frame

Applicant respectfully submits that these excerpts from Tang merely teach that "[t]he replication engine uses the L3 information, including the MET pointer, MAC SA and LTL index to perform the necessary replication operations" and "the LTL index enables the replication engine to perform multicast packet replication while also implementing MFD (block-to-router)" (emphasis added). Additionally, the excerpts teach that "[e]ach L3 multicast entry is further accessed by three components: the IPSA, IPDA and VLAN ID contained in the SCCM message 500" and "[t]hese three components are preferably hashed using a fixed hash algorithm" (emphasis added).

However, simply teaching that "the LTL index enables the replication engine to perform multicast packet replication while also implementing MFD (block-to-router)" (emphasis added), as in Tang, fails to even suggest that "a number of duplications of the packet for each of the plurality of output ports is controlled by descriptors arranged in **a linked-list table** indexed by a

hashing function applied to said multicast address data” (emphasis added), as claimed by applicant. Furthermore, simply teaching that “the IPSA, IPDA and VLAN ID... are preferably hashed using a fixed hash algorithm” (emphasis added), as in Tang, fails to even suggest “**a linked-list table** indexed by a hashing function applied to said multicast address data” (emphasis added), as claimed by applicant.

C. With respect to independent Claims 21 and 25, the Examiner has relied on Col. 12, line 66 – Col. 13, line 2 from Tang and page STN-7 from Wong to make a prior art showing of applicant’s claimed technique “wherein said system uses said hashing function as an index to a linked-list table” (see this or similar, but not necessarily identical language in the aforementioned independent claims).

Applicant respectfully asserts that, in Col. 12, line 66 – Col. 13, line 2, Tang merely teaches that “[a]fter programming the L3 entry with information obtained by the SCCM message, the MSC accesses an appropriate L2 {G,C} entry of the L2 forwarding table using the group MAC DA address and VLAN ID” (emphasis added). However, simply teaching that “the MSC accesses an appropriate L2 {G,C} entry of the L2 forwarding table using the group MAC DA address and VLAN ID” (emphasis added), as in Tang, fails to teach or suggest “[the] system uses said hashing function as an index to a linked-list table” (emphasis added), as claimed by applicant.

Additionally, applicant respectfully asserts that page STN-7 from Wong merely teaches that “Equal Cost Multi-Path (ECMP) routing is a feature which enables an IP packet to be L3 switched to one of multiple next hops” and generally illustrates an “L3 interface index” from an “L3 Table” to an “L3 Interface Table.” However, merely disclosing an “L3 interface index” and “a feature which enables an IP packet to be L3 switched to one of multiple next hops,” as in Wong, fails to teach or even suggest “[the] system uses said hashing function as an index to a linked-list table” (emphasis added), as claimed by applicant.

Further, with respect to independent Claims 21 and 25, the Examiner has relied on step 5 on page STN-13 from Wong to make a prior art showing of applicant's claimed "linked-list table having entries that comprise at least either multicast descriptors or pointers to multicast descriptors" (see this or similar, but not necessarily identical language in the aforementioned independent claims).

Applicant respectfully asserts that step 5 on page STN-13 from Wong merely teaches "[using] HEAD_POINTER as an index to the LS_TABLE." However, "[using] HEAD_POINTER as an index to the LS_TABLE" (emphasis added), as in Wong, fails to even suggest "[a] linked-list table having entries that comprise at least either multicast descriptors or pointers to multicast descriptors" (emphasis added), as claimed by applicant.

Furthermore, step 6 on page STN-13 from Wong merely teaches "[getting] the LS_VECTOR and NEXT_POINTER from [the] LS_TABLE." However, "[getting] the LS_VECTOR and NEXT_POINTER from [the] LS_TABLE," as in Wong, fails to teach "[a] linked-list table having entries that comprise at least either multicast descriptors or pointers to multicast descriptors" (emphasis added), as claimed by applicant.

D. With respect to the subject matter of former Claim 5 (now at least substantially incorporated into the independent claims), the Examiner has relied on the "L3 interface Table" of Page STN-7 and the "column of 8 entries in the L3 table" of Page STN-8 from the Wong reference to make a prior art showing of applicant's claimed "pointer table having a width comprising a plurality of entries coupled to the linked-list table" (see this or similar, but not necessarily identical language in the independent claims).

Applicant respectfully notes that the above excerpts relied on by the Examiner merely disclose an "L3 Interface Table" (Page STN-7) as well as an "index point[ing] to the first entry of column of 8-entries in the L3 table" (Page STN-8), where the L3 table is distinct from the L3 interface table. However, generally disclosing an interface table, in addition to disclosing an

index pointing to an entry of a column of entries in a table other than the interface table, as in Wong, fails to disclose “a pointer table having a width comprising a plurality of entries coupled to the linked-list table” (emphasis added), as claimed by applicant.

E. Additionally, with respect to the subject matter of former Claim 29 (now at least substantially incorporated into the independent claims), the Examiner has relied on Col. 9, lines 60-64 from the Tang reference to make a prior art showing of applicant’s claimed technique “wherein each of the plurality of entries includes a pointer descriptor which includes a plurality of linked-list pointers corresponding to the plurality of output ports” (see this or similar, but not necessarily identical language in the independent claims).

Applicant respectfully notes that the above excerpt relied on by the Examiner merely discloses an “L2 forwarding table 400 comprising a plurality of entries 402, each of which is accessed by a group (G) MAC DA and color (C) VLAN ID. Each L2 {G,C} entry 402 further includes, inter alia, an index field 404 containing a unique port index value” (Col. 9, lines 59-64).

However, merely disclosing a forwarding table comprising entries accessed by a group and color, where each entry includes an index field containing a unique port index value, as in Tang, fails to disclose a technique “wherein each of the plurality of entries includes a pointer descriptor which includes a plurality of linked-list pointers corresponding to the plurality of output ports” (emphasis added), as claimed by applicant. Merely disclosing a forwarding table where each entry includes an index field containing a unique port index value, as in Tang, fails to disclose that “each of the plurality of entries includes a pointer descriptor which includes a plurality of linked-list pointers corresponding to the plurality of output ports” (emphasis added), as specifically claimed by applicant.

F. Applicant further notes that the prior art is also deficient with respect to the dependent claims. For example, with respect to Claims 4 and 15, the Examiner has relied on step 5 on page STN-13 from Wong to make a prior art showing of applicant’s claimed technique “wherein...the

descriptors arranged in the linked-list table include at least one shared descriptor” (see this or similar, but not necessarily identical language in the aforementioned claims).

Applicant respectfully asserts that step 5 on page STN-13 from Wong merely teaches “[using] HEAD_POINTER as an index to the LS_TABLE.” However, “[using] HEAD_POINTER as an index to the LS_TABLE” (emphasis added), as in Wong, fails to even suggest “the descriptors [are] arranged in the linked-list table [and] include at least one shared descriptor” (emphasis added), as claimed by applicant.

Furthermore, step 6 on page STN-13 from Wong merely teaches “[getting] the LS_VECTOR and NEXT_POINTER from [the] LS_TABLE.” However, “[getting] the LS_VECTOR and NEXT_POINTER from [the] LS_TABLE,” as in Wong, fails to teach “the descriptors [are] arranged in the linked-list table [and] include at least one shared descriptor” (emphasis added), as claimed by applicant.

CONCLUSION

Based on the foregoing, all claims are believed allowable, and an allowance of the claims is respectfully requested. If the Examiner has any questions or comments, the Examiner is respectfully requested to contact the undersigned at the number listed below.

To the extent that any arguments and disclaimers were presented to distinguish prior art, or for other reasons substantially related to patentability, during the prosecution of any and all parent and related application(s)/patent(s), Applicant(s) hereby explicitly retracts and rescinds any and all such arguments and disclaimers, and respectfully requests that the Examiner re-visit the prior art that such arguments and disclaimers were made to avoid.

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Respectfully submitted,

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